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ABSTRACT

Economic analysis of the quality of life in America must consider personal values and social indicators as well as economic indicators. Although the technical procedures and statistical techniques of economic research are constantly improving, the validity of the research is hampered by problems of definition and measurement. Definition and measurement efforts exclude subjective indicators from the concept of life quality in order to concentrate on objective indicators such as standard of living, educational attainment, and professional and technical employment. Most economic researchers maintain that subjective values are intangible and unmeasureable. While agreeing that the ordered scales commonly used to assess subjective values are less precise than most economic data, the paper argues that these subjective measurements must be included in any discussion of life quality because they are at least attempts to measure the right thing. Data which can contribute to measuring subjective indicators include number of tickets sold to an artistic performance (to indicate aesthetic pleasure); vacation days (to indicate leisure enjoyment); and crime rate (to indicate fear of crime among residents of a particular area). The conclusion is that subjective values must be included in any valid economic analysis of life quality because they are too significant to ignore. (Author/DB)

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# MEASURING THE RIGHT THING*

by Angus Campbell

The title of my paper comes from a statement by John Tukey, who in addressing the 1975 meeting of this society in Atlanta said, "It is often much worse to have a good measurement of the wrong thing than to have poor measurement of the right thing--especially when, as is so often the case, the wrong thing will in fact be used as an indicator of the right thing."

The groves of Academe and the humid banks of the Potomac are both crowded these days with people who talk about the quality of American life. They are all looking for the one right set of indicators which will tell us what the quality of life in this country is and whether it is improving or deteriorating. Until a few years ago this would not have been a great problem. After we learned to count the Gross National Product and the various income accounts that go with it, we only had to watch the GNP go up or down and we knew what was happening to the quality of life.

During the 30 years following World War II the GNP has generally been on an upward slope. Family income has increased by about two-thirds in constant dollars and the number of families living below the poverty line has dropped to about one in eight. These are important achievements; reducing the proportion of the population living in poverty is a national objective with which none of us would quarrel. But in increasing the number of families whose income is sufficient to purchase an adequate diet and the associated necessities of life, we have not

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increased the sense of confidence with which Americans walk the streets of their cities, we have not increased their feelings of security against unemployment, we have not strengthened the bonds which hold families together, and we certainly have not increased the citizenry's trust in their elected officials. Indeed it can be argued that as material welfare has increased in this country in the last quarter century, subjective well-being has declined.

It cannot be said of course that the Council of Economic Advisors and the other people responsible for the production of our economic indicators are unaware of the fact that a rising national income is not precisely the same as a rising sense of well-being. They inevitably come to talking about individual utilities if they carry their concept of social welfare to its logical conclusion. As my economist colleague, Thomas Juster, puts it, "The goods and services produced by the economic system, with rare exceptions, constitute instrumental rather than ultimate outputs of the system." The ultimate output is the subjective satisfactions and pleasures which flow from the supply of goods and services.

The problem seems to be not so much one of definition as of measurement. Economists are accustomed from the academic cradle to the use of data which have the quality of cardinality, data which permit them to insert a specific quantity of some unit (usually dollars) on the input side of an equation and predict or measure the output in the same unit on the other side. They are well aware that scales of satisfaction or happiness do not have this quality and they tend therefore to refer to

subjective values as "intangible and unmeasureable." They undertake to locate indicators which can be easily counted which can serve as proxies or surrogates for what they consider to be unmeasureable; for example, the number of tickets sold to artistic performances of one sort or another might serve as an indicator of the public's level of aethestic pleasure, the number of vacation days taken might be used as an indicator of the total amount of the enjoyment of leisure, or the reported crime rate in a city or neighborhood might serve as an indicator of fear of crime among the residents of that area.

Although economists generally accept the proposition that the ultimate function of the economic process is to satisfy the needs of the population, their resistance to measuring these satisfactions directly can be said to be virtually total. A recent book review puts the issue in its bluntest terms:

> Seen from the point of view of economic theory subjective well-being is indistinguishable from the well-established concept of individual utility. After a century of discussions, we all came to know for sure that utility is non-measurable, noncomparable as between persons and nonsummable. There is no point in continuing to argue about that. Nonmeasurability implies not only that we do not know what scale to apply to the vertical axis in the utility diagram or to the third dimension of the indifference map, but also that the expressions 'very good, 'good,' 'satisfactory,' etc. used in respect of well-being positions have a meaning for separate individuals but not for interpersonal comparisons There is no guarantee whatsoever that 'good' positions of various persons are in any meaningful sense equivalent. That fact alone is sufficient to undermine the whole concept of subjective well-being of a population. Concentrating efforts at the measurement of subjective feelings seems to be nothing but retreading of old paths which have proved to lead nowhere.

The problem for this reviewer and for everyone else who has thought about the problem is the difficulty of finding a common unit which will

measure both objective products and subjective utilities. Dollars will not do. We have no way of converting so many dollars worth of product into so many units of utility. If we could find such a common denominator the relationship between objective and subjective quality of life would become a matter of simple arithmetic.

In the absence of such a common unit the reaction of the reviewer I have been quoting is to dismiss the whole concept of subjective well-being. That does not mean that he has abandoned interest in the concept of quality of life; it means instead that he has decided that quality of life must be assessed in material terms because subjective measurement is impossible. In other words, in Tukey's language, he is prepared to use a good measurement of the wrong thing as an indicator of the right thing.

I do not think it is likely that we will find the magic numeraire that will solve the problem of converting products into utilities. There are also undoubted difficulties in the assumption that the utility one person assigns a product or an experience is directly comparable on a common scale to the utility another person assigns it, that an "interpersonal comparability of utility" is in fact possible. It may be argued that individual A and individual B may both say they get a great deal of satisfaction out of their work but in fact A's utility may be less than B's because A's expectations were lower than B's. The question then becomes which is more real to A and B, their sense of satisfaction with their work or their position on a scale of utilities that might be derived from their work. And even if we accepted the proposition that

their sense of satisfaction is what is real to them we do not know precisely that a great deal of satisfaction feels the same to A as it does to B.

Generally speaking of course we are not concerned with clinical comparisons of individuals A and B but in comparisons of the social groups to which A and B belong. We are concerned with the quality of life of society as a whole and of its various segments. We would assume that the problem of individual variability in standards of judgment would be less serious when we are comparing large groups in which we would expect a certain amount of offsetting variation to occur. If we find that unemployed people are less satisfied with their lives than employed people of equivalent educational and occupational background we are inclined to believe that this represents something more than the vagaries of individual expectations. If we are able to follow these differences through time we are able to establish trends and to identify functional relationships which may exist between attitudinal and behavioral variables.

But there is no doubt that in comparison to the interval scales which are commonly used in counting economic products the ordered scales we use in assessing subjective utilities are weak measures. Our alternatives seem to be to use the established measures of economic products as our measure of quality of life and set aside the whole concept of subjective well-being (as our reviewer proposes) or to argue that subjective well-being is an indispensable attribute of quality of life and that the objective indicators measure it so poorly we are compelled to use the less precise subjective measures because they are at least attempting to measure the right thing.

In fact I think we have no alternative. As Robert Gordon recently observed in his presidential address to the American Economic Association, "Human welfare is a concept that will not go away no matter how uncomfortable it makes the economic theorist." In a society as politically free as ours it is impossible to imagine that the public's sense of well-being or discontent can be ignored. Values which cannot be accounted for in a traditional economic balance sheet are important to people and influence their behavior. They include the enjoyment of social relationships, the satisfaction of challenging work, the respect of friends and associates, a sense of security from attack in their homes and on the street, peace and quiet in their neighborhoods, pleasure in the appreciation of natural beauty and many others. Few people have abandoned interest in the economic realities of life but their lives are not as preempted by economic considerations as the conventional image of economic man might have led us to expect.

However many reservations we may have about our ability to measure these subjective utilities there is no doubt that policy-makers in a democratic society have to be concerned about them. They may very well draw up a balance sheet which gives them a detailed statement of the economic costs and benefits to be expected from a specific policy. But, whether explicitly or not, they also have in mind a second set of accounts where the utilities and disutilities to be expected are entered. The fact that these latter entries may be based on imperfect evidence does not make them insignificant. They may be imprecise measures but they are indicators of something the policy-makers recognize as important.

We are currently witnessing an example of this double bookkeeping in the controversy over the admission of the Concorde aircraft to Kennedy Airport. One set of accounts will show the financial benefits to the City of New York, the time saved by busy passengers, and other objective gains to the New York community. A second set of accounts will record the annoyance of New York residents with the noise associated with Concorde overflights. The people who make the decision at Kennedy will consider both of these sets of accounts and it may well be that their evaluation of these conflicting indicators will be as much influenced by the subjective factors as by the objective. They will not need to be able to convert annoyance into dollar amounts nor will they be much concerned whether one annoyed person has exactly as great a disutility as another. They do know that an annoyed electorate is capable of expressing its resentment and that public officials who disregard the public's sense of well-being and ill-being do so at their own peril.

A society as committed to the values of human rights and civil liberties as ours is cannot hope to represent the quality of its national life adequately by counting the usual economic and sociological indicators. The Eastern European countries lean heavily on their statistics on employment, medical service and educational enrollment as indicators of the quality of their lives; they do not talk much about nonmaterial values. But we must take account not only of the objective circumstances in which our people live but of the desirable and undesirable impact these circumstances have on their life experience. Monitoring our rates of crime, divorce, abortion, unemployment, pollution and disease undoubtedly tells us something about this experience as do

statistics on leisure time, vacation travel, participation in artistic events and other such positive episodes of life. But it must be clear that these indicators however countable they may be, are only inferential and very partial.

Our economic indicators tell us that for the last 30 years we have had a rising standard of living with an associated increase in educational achievement and professional and technical employment. The very fact of these trends makes these indicators less capable of giving us an adequate description of the quality of American life. A growing proportion of our people are being liberated from a preoccupation with income, their horizons are being extended, the awareness of alternatives raised, and their concern with noneconomic values increased. There is no doubt that we should extend and refine the accounts we keep on standard of living and the objective circumstances of life. They tell us a great deal and they are indispensable. But we will need a different set of accounts to inform us about the subjective experience of life. They will not be as precise or as elegant but they will be measuring the right thing.